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ships some of these second-growth forests may yet be seen which have been growing at least fifty or sixty years. So that the oft repeated remark as to the number of Iowa trees, to the effect that their number has greatly increased since the country has been settled, is strictly true."

#### CONTRIBUTIONS FROM THE NATIONAL HERBARIUM.

THE Division of Botany of the United States Department of Agriculture has issued another of its series of Contributions from the National Herbarium which have done so much to raise it in the estimation of the scientific men of the country. The present bulletin (Vol.V., No. 4) is mainly from the pen of J. N. Rose, and deals mostly with Mexican plants. In his studies of Mexican and Central American plants, the author proposes a rearrangement of the genera of the difficult group Agaveae, illustrating each with one or more wood cuts. Another interesting division of this paper is that on 'Some Mexican species of *Thalictrum*.' Perhaps the most attractive paper in the bulletin is that entitled 'Notes on Useful Plants of Mexico.' This takes up in order the cereals and vegetables, fruits, beverage plants, seasoning and flavoring plants, medicinal plants, soap plants, tanning and dye plants, fiber plants, brush and broom plants, fence and hedge plants, plants, yielding wool, and miscellaneous useful plants. The principal fence plant appears to be the giant cactus bearing the name *Cereus pecten-aboriginum*, which often reaches 15 to 20 metres (45 to 60 feet) in height, and sends up a multitude of long, naked branches. These are cut into lengths of 18 to 20 dm. (5 to 6 feet) and set in rows where they root and form fences of the most impenetrable kind. Several fine photographs of this cactus, reproduced in half tone give one an excellent idea of its appearance. The text and half tone illustrations of fibre plants are equally instructive. One is struck with the ingenuity displayed by the people in utilizing the fibre plants of the country, and at the same time with the primitiveness of the methods employed.

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#### UNITED STATES GEOLOGICAL SURVEY.

IN forwarding Part II. of the 19th annual report of the U. S. Geological Survey, which we hope to review later, the director, Dr. Chas. T. Wolcott writes:

Of its contents (five papers), the first 'Physiography of the Chattanooga District, in Tennessee, Georgia and Alabama,' by C. W. Hayes, sets forth the results of a study of a region in which several distinct types of land surface are characteristically developed under such conditions that the part taken by the several factors can be fairly well determined; it traces the process of drainage development and the origin of the present land forms upon rocks of diverse erodibility and diverse structure; and, finally, by a concurrent examination of drainage and surface, reviews the recent geologic history of the region.

The second 'Principles and Conditions of the Movements of Ground Waters,' by F. H. King, contends that the water which occupies the interior of the earth's crust, is, like that of the ocean and of the atmosphere, constantly in motion. These motions are at once numerous, extended and very complex, and are brought together and discussed under three categories, gravitational, thermal and capillary.

The third, 'Theoretical Investigation of the Motion of Ground Waters,' by C. S. Slichter, relates to an investigation of the general problem of the flow of water through porous soils of rock.

The fourth is entitled, 'Geology of the Richmond Basin, Virginia,' by N. S. Shaler and J. B. Woodworth. The Richmond area is important from the economic as well as the scientific point of view. It contains the only freely burnable coal lying immediately adjacent to tide water in the eastern portion of the United States. The quantity and quality of this fuel appear sufficient to give it a value in the industrial arts.

The final paper, 'The Cretaceous Formation of the Black Hills as indicated by the Fossil Plants,' by L. F. Ward, with the collaboration of W. P. Jenny, W. M. Fontaine and F. H. Knowlton, presents a brief historical review of the investigations of earlier explorers, followed by specific chapters on the Minnekahta, Blackhawk

and Hay Creek regions, general observations on the Cretaceous flora, fossil cycadean trunks, fossil forests, lower Cretaceous plants other than cycadean trunks and silicified wood, and the flora of the Dakota group proper.

#### PROFESSOR VIRCHOW'S JUBILEE.

THE Berlin correspondent of the *British Medical Journal* writes: It was to be expected that Rudolf Virchow's Jubilee—the 50th anniversary of his tenure of office as Professor Ordinarius—would not be passed over in silence by the University of which he is, perhaps, the most illustrious member. No banquet or similar social function took place, it is true; nor was there any array of State delegates or representatives of foreign universities. In the hall of the Pathological Museum (Virchow's own creation) the Senate of the University, its Rector, Professor Fuchs, at their head, assembled to greet their revered and honored colleague, and to present an illuminated and illustrated address, the text of which had been written by Professor Waldeyer. In it Virchow's wonderful many-sidedness, and his achievements as scientist, archæologist, and politician were recounted in glowing terms. "We all know, however," the address went on to say, "that the roots of your strength lie in your work as a German Professor, and ever the 'Professor' has been foremost with you. We know that, even in your 78th year when the day's work is done, the night hours are devoted by you to scientific research \* \* \* Thus we see you to-day in our midst, the Professor Ordinarius of five decades, active among the most active, beloved, honored and admired by thousands of pupils, colleagues, and men of all orders in every part of the world. In honoring you, who in your long, laborious life have ever had at heart the honor and weal of the German universities, and above all of the Alma Mater, Friederica Guilelma Berolinensis, we honor ourselves. May your strength be long preserved to us!" Virchow, who was surrounded by his family and many personal friends, in his reply gave expression to his thanks for the support which he had always met with on the part of the university, and said it was true that his chief feel-

ing had ever been that of 'the Professor.' In cases of conflicting interests he had always chosen the course of 'Professor.' He said that, like others of his age, he was sometimes conscious of a certain isolation, many friends and fellow-workers having gradually fallen out of the ranks. But the best results of his work had always been due to the independent efforts of his pupils, and he had the firm hope that the pathological school of Berlin would retain its distinguished position. In the evening the Berlin Medical Society did homage to its President (Virchow) by a graceful little spontaneous ceremony. The Presidential chair was wreathed and decorated with flowers and garlands, and the Vice-President, Professor v. Bergmann, greeted Virchow with a speech full of hearty good feeling, respect and admiration. Virchow seemed sincerely touched, and expressed his thanks in a short speech. Subsequently, he took a prominent part in the evening's debate on Organo-therapeutics, thus proving mental unimpaired activity even at the end of a day of ovations and congratulatory speeches.

#### SCIENTIFIC NOTES AND NEWS.

THERE will be a meeting of the general committee of the American Association for the Advancement of Science at Yale University, New Haven, Conn., on December 28th at 4:30 p. m. It will be the sad duty of the committee to elect a president to fill the vacancy caused by the death of Professor Edward Orton. Immediately following the meeting of the committee a meeting of the Council will be held to consider the general business of the Association.

THE desirability of forming a western branch of the American Society of Naturalists, with the same objects and conditions of membership as the main society, has long been under consideration by the naturalists of the Central and Western States. For the purpose of starting such a branch, if it seems, on discussion, desirable (the main Society acquiescing), a call has been issued for a meeting of members of the American Society of Naturalists and affiliated scientific societies living west of the Alleghanies and of others interested in providing for an annual meeting of the western naturalists; the